Pyogenic granuloma underlying cutaneous horn in a young boy

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ABSTRACT

Cutaneous horn is an elongated, keratinous projection that usually occurs over the sun-exposed areas. It is a clinical diagnosis and may overlie any benign, premalignant, or malignant conditions. Treatment includes wide surgical excision with careful histological examination to exclude a focus of malignancy. An unusual case of a pyogenic granuloma presenting as cutaneous horn on the lower lip in an 11-year-old boy is presented here.

Key words: Cutaneous horns, lip, pyogenic granuloma

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INTRODUCTION

Cutaneous horn is an elongated, keratinous projection from the skin, ranging in size from a few millimeters to many centimeters that resembles a miniature horn.[1] Its height must be at least one and half times the diameter of the base. The horn is composed of compacted keratin and the base may be flat, nodular, or crateriform. It usually occurs over the sun-exposed areas, that is, upper part of the face, nose, scalp, lips, eyelids, ear cartilage, neck, shoulders, forearms, and back of the hands.[2] People in the sixth to the middle of the seventh decades are most affected.[3] It is a clinical diagnosis and may overlap with many benign, premalignant, or malignant conditions. The final diagnosis depends on histological examination of specimen.[3] Treatment options include wide surgical excision with careful histological examination to exclude a focus of malignancy.

Herein we report an unusual case of a pyogenic granuloma presenting as cutaneous horn on the lower lip in an 11-year-old boy.

CASE REPORT

An 11-year-old young boy attended skin outpatient department (OPD) with complaints of growth over lower lip, which was itchy with occasional bleeding. He was relatively asymptomatic 2 months back, when he developed lesion over lower lip, which gradually progressed in size. On examination, single nontender pedunculated blackish cylindrical horny growth, hard in consistency of about 2 cm in length and 1 cm at base was present over left side of lower lip [Figure 1]. There was no history of fever or trauma at the site. There was no history of similar lesions in the past. He had no systemic complaints. A clinical diagnosis of cutaneous horn was made and excision was advised, for which his parents were reluctant. After about a month, the patient again visited our OPD with complaints of increased episodes of bleeding from the lesion. He denied application of any medication in the mean period. He also did not undergo any intervention. Examination revealed a 3 × 2 cm pedunculated, erythematous growth over lower lip that was soft to firm in consistency and bled on touch [Figure 2]. An excision biopsy was performed. Histopathological examination revealed squamous epithelium that was ulcerated at places with exudates and necrosis. The underlying stroma showed proliferation of blood vessels separated by edema and chronic inflammatory cells comprising lymphocytes and plasma cells. Areas of hemorrhage were seen

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[Figure 3]. A histological diagnosis of pyogenic granuloma was made. The patient was followed up for two months with no sign of recurrence [Figure 4].

DISCUSSION

A cutaneous horn (*cornu cutaneum*) is a conical protrusion from the skin surface consisting of cornified material organized in the shape of an animal horn,[2] usually affecting the head and neck region. Although it derives its name from its resemblance to animal horn, it lacks an axially positioned, well-formed bone characteristic of an animal horn.[4] Most cutaneous horns do not project more than 1 cm from the skin surface and are usually shed off due to trauma or are excised before they grow further. The most common sites are on the upper part of the face, nose, scalp, lips, eyelids, ear cartilage, neck, shoulders, forearms, and the back of the hands.[2] They may develop on areas not exposed to sunlight such as the penis, mucosal lower lip, and nasal vestibule.[5] The condition is thought to be more frequent in men, but no consistent gender pattern has been demonstrated.[2]

Figure 1: Single nontender pedunculated blackish cylindrical horny growth over lower lip

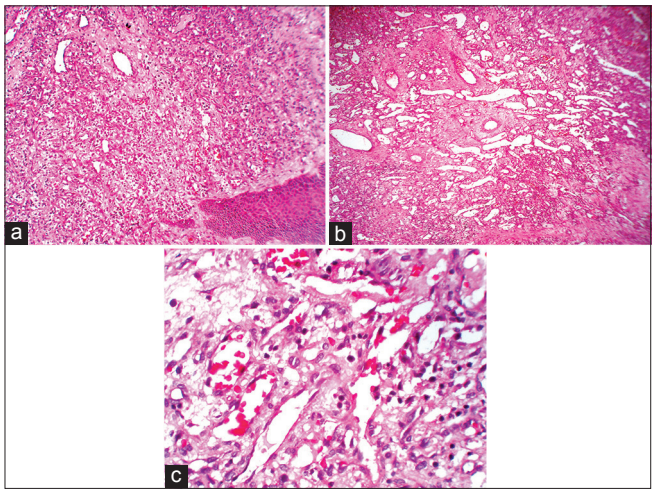

Figure 3: Proliferation of blood vessels separated by edema and chronic inflammatory cells comprising lymphocytes and plasma cells in dermis. H and E stain (a) ×4, (b) ×10, (c) ×40

Pyogenic granuloma (PG), also referred to as lobular capillary hemangioma, or granuloma pyogenicum, is a benign vascular

Figure 2: Pedunculated erythematous growth soft to firm in consistency, after 1 month

Figure 4: After 1 month of removing the growth

proliferative lesion of the skin and mucous membrane commonly seen in children. It is a bright red-brown tumor with a thin intact epidermis. Its prevalence peaks in the second decade of life. PG usually presents as a solitary, rapidly growing, red papule or nodule, usually painless, with propensity to bleed spontaneously or with manipulation. It is more common in males, whereas mucosal occurrence is more common in females. Although the actual mechanism for the development of PG is not known, various factors such as trauma, hormonal influences, viral oncogenes, underlying microscopic arteriovenous malformations play their role. The production of angiogenic factors, cytogenetic abnormalities, and overexpression of transcription factors P-ATF2 and STAT3 were also found to have a role in its development.[6]

PG underlying cutaneous horn is very rare. In our extensive literature search, only two such cases were found. A case of PG clinically diagnosed as cutaneous horn on the chin in a 38-year-old woman[7] and a case of cutaneous horn on vermillion border of lip in a black child proved to be a PG was reported[8] similar to our case.

Pathogenesis of horn formation in humans has not been fully elucidated, but it has been suggested to be due to abnormal accumulation, excessive adhesiveness, and compaction of keratin. Bland-Sutton, in 1911,[9] classified cutaneous horns into four types according to the underlying lesion and the site:

1. Sebaceous horns arise from sebaceous cysts, which occur on the scalp;
2. Warty horns occur on penis, morphologically resembling sebaceous horns;
3. Cicatrix horns are rare, arise from burn scars;
4. Nail horns arise from big toe nails in bedridden patients with poor personal hygiene.

In a large study by Yu *et al*., out of 643 cases of cutaneous horn studied, the underlying pathology varied from benign, premalignant, to malignant with incidences of 61.1%, 23.2%, and 15.7%, respectively. It can arise from a variety of benign lesions (angiokeratoma, benign lichenoid keratosis, pyogenic granuloma, dermatofibroma, DLE, epidermal nevus, epidermolytic acanthoma, fibroma, granular cell tumour, inverted follicular keratosis, pseudoepitheliomatous balanitis, organoid nevus, prurigo nodularis, sebaceous adenoma, seborrheic keratosis, trichilemmoma, verruca vulgaris), premalignant lesions (adenoacanthoma, actinic keratosis, arsenical keratosis, pagets disease, solar keratosis), and malignant lesions (squamous cell carcinoma, basal cell carcinoma, Bowen's disease, Kaposi sarcoma, keratoacanthoma, renal cell carcinoma).[10]

Histologically, there is a greatly thickened stratum corneum with scattered areas of parakeratosis. The horn at the base will display features characteristic of the pathologic process responsible for the development of the horn. It is regarded as reactive phenomenon to the underlying pathology that is usually benign. However, a premalignant or malignant lesion may be associated with or without actinic damage as the underlying pathology.[11]

Treatment is wide surgical excision with careful histological examination to exclude a focus of malignancy.

CONCLUSION

Underlying pathology in a cutaneous horn is usually benign. However, a premalignant or malignant lesion may be associated. Therefore wide excision with histopathological examination is must. As per our literature search, this is the first such case to be reported from India. Cutaneous horns are usually seen in the elderly, whereas our case is a young boy, which make it a rare case.

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Conflicts of interest

There are no conflicts of interest.

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